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(54) **HEAT AND LIGHT TREATMENT DEVICE
USING NANOTECHNOLOGY**

6,586,133 B1 7/2003 Teeters et al.
6,665,169 B2 12/2003 Tennent et al.
7,116,546 B2 10/2006 Chow et al.

(Continued)

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FOREIGN PATENT DOCUMENTS

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GB 2515010 A * 12/2014
WO 2010123528 10/2010

(Continued)

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OTHER PUBLICATIONS

(21) Appl. No.: **13/940,307**

Using Freezing Conditions to Kill Bed Bugs, webpage from <https://web.archive.org/web/20121115090510/http://www.bedbugs.umn.edu/bed-bug-control-in-residences/using-freezing-temperatures-for-bedbug-control>, University of Minnesota (Nov. 15, 2012).*

(Continued)

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(58) **Field of Classification Search**

CPC **A61F 2007/0226**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,658,583 A 8/1997 Zhang et al.
6,205,016 B1 3/2001 Niu
6,414,836 B1 7/2002 Tennent et al.

(57) **ABSTRACT**

The current invention discloses a treatment device having a heat source, a power source, a heat applicator and a lighting mechanism. The power source includes at least one nanotech battery, ensuring superior properties such as prolonged electricity production and prompt recharging. The heat applicator includes a heat conductive layer made from nanofibers, providing highly efficient heat distribution to the targeted regions. The lighting mechanism employs light emitting nano fibers to treat targeted regions. The power source provides energy to the heat and light source, which generates heat and light so that the applicator may distribute to an injury site or wound bed of a user. The current device may also be used for cooling, instead of heating applications. In addition to the medical utilizations, the current device may also play a central role in other apparatus that require thermal control capabilities.

17 Claims, 2 Drawing Sheets

